

Trajectory and Fates Mode

The trajectory and fates mode of operation predicts both the movement and weathering of surface oil. The fate processes simulated are spreading, evaporation, entrainment, emulsification and shoreline stranding.

Either instantaneous or continuous spills with a constant oil release rate can be simulated. Each spilllet is transported and weathered independently. The oil composition, selected by the user from a library of oil types, is characterized by its boiling point curve. This characterization allows the model to accurately predict the weathering of a wide variety of crude and refined oil products.

Stochastic Mode

In the stochastic mode, a user-specified number of spill simulations are executed varying only the environmental conditions at the time of the spill. The stochastic model includes all the weathering processes in the trajectory and fate model.

The spill release occurs at random times over a period of time (by month to over an entire year). Historical wind records from regional meteorological stations can be used, or the model can generate wind time series from zero- or first-order statistical wind distributions.

The multiple trajectories predicted by the stochastic model are summarized as probability contours showing the probability of land and water areas being impacted by oil spilled at the specified release site. The probability contours form an envelope showing the direction(s) oil will move from the site and where it will impact land. Simulation results enable the user to assess potential extent of the area at risk for that seasonal period.

3.4.3 Application Of Oilmap Model To Spill Scenarios

Oil Spill Scenario

The Reasonable Worst Case Discharge (RWCD) scenario identified by the Oil Spill Contingency Plan was used to evaluate the potential impact on the shoreline. The sensitivity Analysis evaluated the potential risk from the RWCD spill at the Martinez Facility. These parameters for the spill risks are summarized in the following table:

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